

To: Jeannie Summerhays

Via: Steve Alexander

From: Ching-Pi Wang

Date: January 10, 2006

Subject: Gorst Creek/Bremerton Auto Wrecking Landfill, Bremerton, WA.

Per your request via Steve Alexander, this memorandum provides information about the history and regulatory options for the Gorst Creek/Bremerton Auto Wrecking Landfill (BAWL) site located in Kitsap County near Bremerton, WA.

Site Description

BAWL is a closed landfill located 1.5 miles west of Gorst, Washington, along the southeast side of State Highway 3 SW (Figures 1 & 2). The site is located approximately 5-miles southwest of Port Orchard and approximately 6-miles south-southwest of Bremerton.

BWAL is a closed and abandoned unlined, mixed municipal solid waste landfill that operated from 1968 to 1989. The landfill is located in the Gorst Creek ravine. At the start of landfilling operations in 1968, a 24-inch diameter corrugated steel culvert was installed in the ravine to allow passage of Gorst Creek through the bottom of the landfill. The ravine was subsequently filled with waste and overburden.

Gorst Creek flows through the closed landfill via the underground culvert. Gorst Creek is a salmon stream and 2.5-miles from the landfill empties into Sinclair Inlet of Puget Sound.

The landfill received mixed municipal waste and demolition debris from the public. It also received medical waste from the Puget Sound Naval Shipyard. Estimates of the volume of debris in the Gorst Creek ravine range from 30,000 to 150,000 cubic yards.

Site Ownership

Ownership of the landfill has changed hands several times since it began unpermitted operation in 1950. The landfill was operated as the Bremerton Auto Wrecking Landfill in 1980 by Sid and Lucille Uhinck until its closure in 1989.

Ownership from time of closure to 2001 is unknown.

In February 2001, the property was obtained from Kitsap County Treasurer by Vern L. Padgett of Tacoma, Washington.

In February 2002, Mr. Padgett deeded the property to the Carina Trust.

In November 2002, the property was acquired from the Carina Trust by the current owner William Nilles.

Site Operations and Waste Characteristics

The Gorst Creek/Bremerton Auto Wrecking Landfill was an active facility from 1950 until approximately 1989. Although the landfill operations began in 1950, permits for the site were only obtained from 1964 through 1987.

Kitsap County Health Department (KCHD) files indicate the landfill was actively receiving wastes during periods when there were no permits issued.

The Bremerton-Kitsap County Department of Public Health (BKCDPH) issued a refuse disposal permit for the period 1968 to 1972.

For the period of 1973 to 1978, the BKCDPH permitted the landfill to operate a solid waste site.

In 1979, BKCDPH issued a permit with specific conditions requiring the landfill to be operated in compliance with local and state regulations.

From 1985 to 1989, the landfill was permitted by KCHD as a demolition disposal site.

In addition to the permitted waste, the landfill received other wastes such as medical waste from the Puget Sound Naval Shipyard.

Site Problems

The landfill has three types of problems:

- Slope stabilization
- Source of hazardous substance contamination
- Future contaminant migration

Slope Stabiliation

In March 1997, after a significant rainfall event (7.3 inches in 24-hours), Gorst Creek backed up behind the landfill and flooded across the surface of the landfill. This caused a portion of the northwest slope of the landfill to fail and wash into Gorst Creek on the northwest side of the landfill. Landfill debris was found approximately 0.5-mile downstream in Gorst Creek.

After this slope failure, upstream and downstream catchment berms and culvert were installed on Gorst Creek in an attempt to stop future slope failures.

In January 2002, however, after another heavy rainfall event, Gorst Creek backed up and flooded over the landfill again, resulting in another slope failure. This failure was smaller than the 1997 failure; however, landfill debris was released into Gorst Creek when the upstream catchment berm was destroyed by the flood. The lower catchment berm remained in place and is still present today.

Source of Hazardous Substance Contamination

In November 2003, the USEPA, through its contractor Ecology and Environment, Inc., conducted a Site Inspection at the site. Sampling results from the Site Inspection, indicate the site is a source of hazardous substance contamination. Specifically, pesticides, Target Analyte List metals, semi-VOC's and VOC's.

Samples were collected of groundwater, surface water, and sediments.

The groundwater sample collected from the City of Bremerton monitoring well contained an elevated concentration with respect to background of mercury. The on-site ground water sample contained elevated concentrations with respect to background concentration of two SVOVs and one VOC.

The surface water sampled did not contain contaminants at elevated concentrations with respect to background concentrations.

The sediment samples contained elevated concentrations of six pesticides and three metals.

Future Contaminant Migration

The collapse of the underground culvert in the ravine beneath the landfill may provide a pathway for contaminant migration. During heavy rains, surface water will pool on the upgradient side of the collapsed portion of the pipe. As it continues to rain, the level of the pooled surface water will rise until the water flows over the surface of the landfill and off the northwest side of the landfill. This condition contributes to the weakening and possible collapse of the landfill wall into Gorst Creek.

As water flows over the side of the landfill, debris and contaminants from the landfill are deposited into Gorst Creek.

Current Threat to Human Health and the Environment

The USEPA Site Inspection concludes that "contaminants have been and continue to be released to Gorst Creek. This contamination also could potentially impact nearby groundwater wells, sport fisheries, the tribal fish-rearing facility, wetlands, and other sensitive environments in Gorst Creek and Sinclair Inlet."

Additionally, the site was ranked a "1" by the site hazard assessment conducted by the Bremerton Kitsap County Health District in March 2002.

Work to be Done at the Site

Based on my knowledge of conditions at the site, the following work should be completed at the site.

- Environmental testing to delineate areal extent of contamination.
- Closure of landfill.
- Slope stabilization of landfill slopes.
- Environmental remediation, if necessary.

Regulatory Options

1. TCP utilizes MTCA and pursues PLP's (past and current owners and operators, waste shippers, waste owners to complete the work at the site).
 - This option would be very time intensive for TCP staff. Also, this site may not be a priority for TCP since it is primarily a slope stabilization concern; and, secondarily a health/environmental concern.
 - Depending of the funding capability (and willingness) of the PLP's, TCP may have to fund the work to be done at the site.
2. Kitsap County takes responsibility to complete the work needed at the site.
 - Similar to TCP, if Kitsap County took the regulatory lead to pursue the PLP's of the site, then they would be faced with staffing, funding, and workload priority issues.
 - Kitsap County could take the role of PLP and negotiate an Agreed Order or Consent Decree with TCP. This may bring state grant funds to the project.

Relationship with Kitsap County Health District

- To be discussed.

References

USEPA, June 2004. *Gorst Creek - Bremerton Auto Wrecking Landfill Integrated Assessment Report*, Port Orchard, Washington. TDD: 03-07-0009.

Bremerton Kitsap County Health District, March, 2002. *USN Bremerton Auto Wrecking Landfill Site Hazard Assessment File Documentation*.

Table 2-2

HART CROWSER 2000
SEDIMENT SAMPLES ANALYTICAL RESULTS SUMMARY
GORST CREEK - BREMERTON AUTO WRECKING LANDFILL
INTEGRATED ASSESSMENT
PORT ORCHARD, WASHINGTON

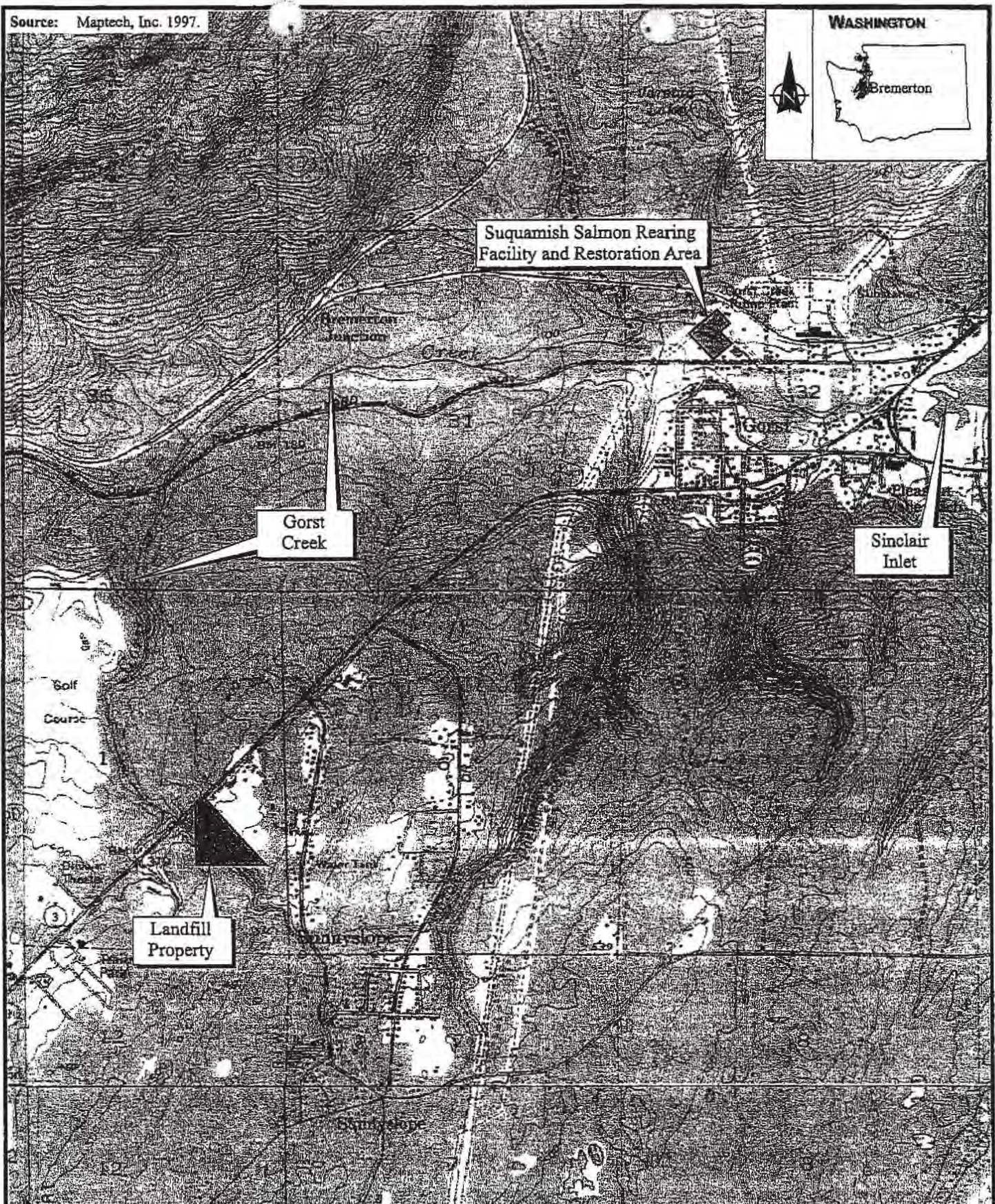
Sample ID	GL-SED-01	GL-SED-02	GL-SED-03	GL-SED-04
Sample Date	1/10/2000	1/11/2000	1/11/2000	1/11/2000
Description	Background	Composite		
Pesticides/PCBs (mg/kg)				
4,4'-DDT	0.0043 U	0.012 J	0.0041 U	0.0041 U
SVOCs (mg/kg)				
4-Methylphenol	0.43 U	0.017 J	0.4 U	0.4 U
Benzo(a)anthracene	0.43 U	0.045 J	0.4 U	0.4 U
Benzo(a)anthracene	0.43 U	0.045 J	0.4 U	0.4 U
Benzo(b)fluoranthene	0.43	0.058 J	0.4 U	0.4 U
Benzo(k)fluoranthene	0.43	0.042 J	0.4 U	0.4 U
Butylbenzylphthalate	0.43 U	0.095 J	0.4 U	0.4 U
Chrysene	0.43 U	0.073 J	0.4 U	0.4 U
Di-n-butylphthalate	0.43 U	0.03 J	0.4 U	0.4 U
Di-n-octylphthalate	0.43 U	0.027 J	0.4 U	0.4 U
Fluoranthene	0.43 U	0.097 J	0.4 U	0.4 U
Indeno(1,2,3-cd)pyrene	0.43 U	0.045 J	0.4 U	0.4 U
Pentachlorophenol	1.1 U	0.036 J	1 U	1 U
Phenanthrene	0.43 U	0.06 J	0.4 U	0.4 U
Pyrene	0.43 U	0.097 J	0.4 U	0.4 U
TAL Metals (mg/kg)				
Antimony	3.4 U	7.6	3.2 U	3.2 U
Arsenic	2	3.5	27.7	2.1
Chromium	35.7	30.5	17.3	30.3
Copper	11.3	159	12.7	19.7
Lead	4.2	113	16.6	12.4
Nickel	54	53.2	23.1	32.1
Zinc	45.4	108	76.4	97.3

Source: Hart Crowser 2000.

Note: Bold type indicates the sample result is above the detection limit.

Key:

DDT = Dichlorodiphenyltrichloroethane.
 ID = Identification.
 J = Estimated value.
 mg/kg = Milligrams per kilogram.
 PCBs = Polychlorinated biphenyl.
 SVOCs = Semivolatile organic compounds.
 TAL = Target Analyte List.
 U = Not detected at indicated detection limit.



**GORST CREEK-BREMERTON
AUTO WRECKING LANDFILL
INTEGRATED ASSESSMENT
Port Orchard, Washington**

Figure 2-1

SITE VICINITY MAP



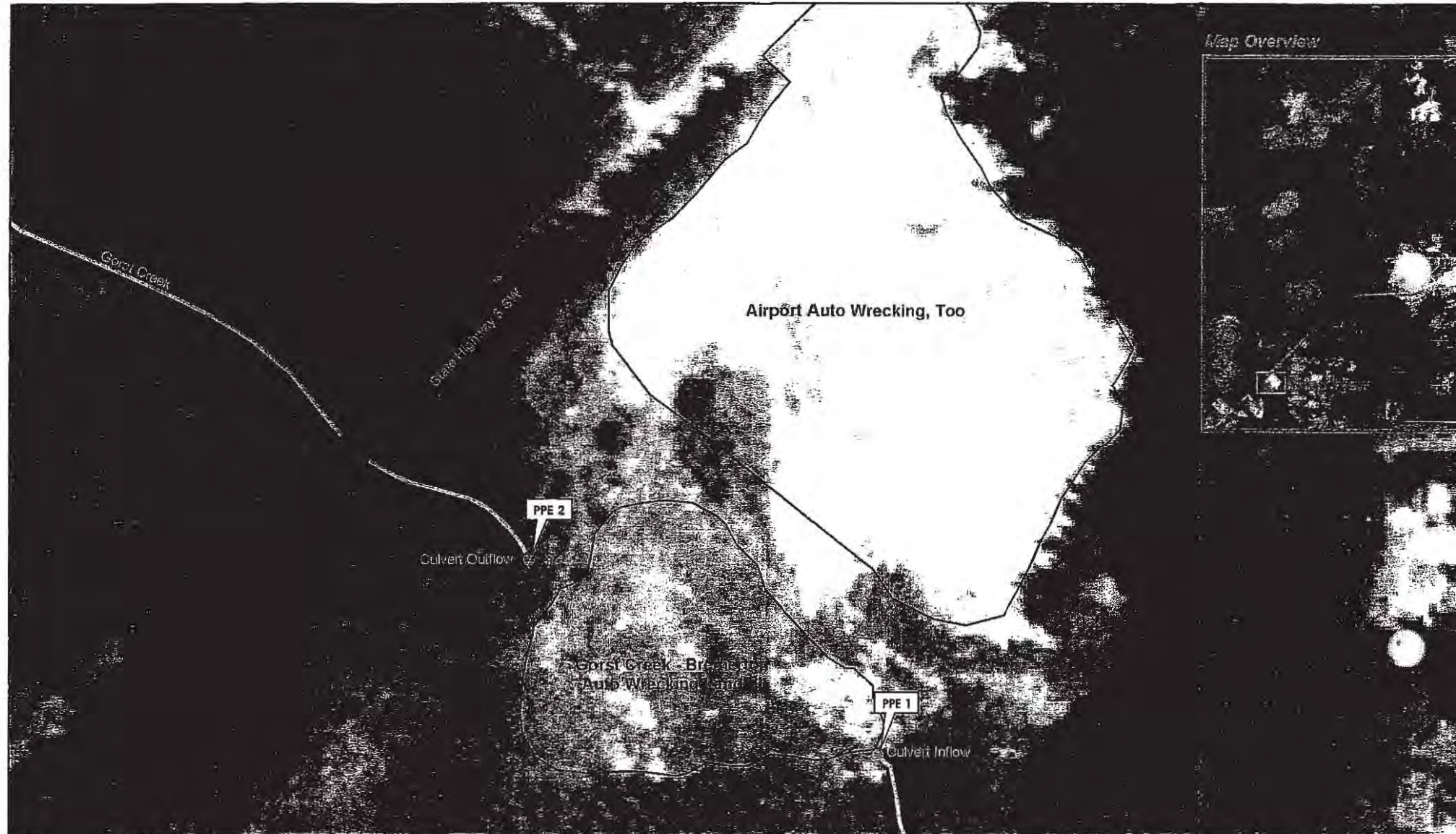
ecology and environment, inc.
International Specialists in the Environment
Seattle, Washington

0 .25 .5
Approximate Scale in Miles

Date:
6-1-04

Drawn by:
AES

10:START-2\03070009\S866\fig 2-1



ecology and environment, inc.
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Seattle, Washington



0 30 60 120 180 240 300
Feet

Map Reference: USGS Digital OrthoPhoto Quarter
Quadrangle - Bremerton West, July 7, 1994

Gorst Creek - Bremerton Auto Wrecking Landfill
Integrated Assessment
Port Orchard, Washington

Figure 2-2
SITE LAYOUT MAP

Date:
02/12/2004

Drawn by:
avh

Job Number:
001281.0291.011A